

What is claimed is:

1. A method of initiating a media call over a packet-switched network comprising:-
 - 5 (a) issuing a call set-up request at a first terminal having an address in a first address range, the call set-up request being destined for a second terminal in a separate network having an address in a second address range which overlaps with the first address range,
 - 10 (b) passing the call set-up request to a first call server communicatively coupled to the first address range,
 - (c) passing the call set-up request from the first call server to a second call server communicatively coupled to the second address range,
 - (d) causing the call servers to negotiate a port at each respective addresses of the terminals for subsequent communication once the call is set-up,
 - 15 (e) providing a first address translator having a first range address in the first address range,
 - (f) providing a second address translator having a second range address in the second address range,
 - 20 (g) causing the first call server to provide the first terminal with the first range address of the first address translator as its destination address for the call,
 - (h) causing the second call server to provide the second terminal with the second range address of the second address translator as its destination address for the call,
 - 25 (i) arranging for the first address translator to pass data received at the first range address from the first terminal at the negotiated port to the second address translator for onward communication to the address of the second terminal at the negotiated port, and
 - 30 (j) arranging for the second address translator to pass data received at the second range address from the second terminal at the negotiated port to the first address translator for onward communication to the address of the first terminal at the negotiated port,

whereby two-way communication is established between the first and second terminals via the first and second address translators.

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2. A method according to claim 1, wherein the first and second address translators are integrated in a single device having external addresses in the first and second address ranges.
- 5 3. A method according to claim 1, wherein the first and second address translators each have a third range address in a third address range which is common between the address translators, wherein the respective third range address of the second address translator is provided to the first address translator by at least one of the call servers and vice versa, and wherein data
10 passed between the address translators is passed via their respective third range addresses.
4. A method according to claim 1, wherein the call servers each have a fourth range address in a fourth address range which is common between the call
15 servers.
5. A method according to claim 1, wherein the first and second address ranges are IANA reserved private IP address ranges as defined in RFC 1918.
- 20 6. A call server for setting up VoIP calls over a packet-switched network comprising:-
 - (a) a terminal controller arranged to receive a call set-up request from an originating terminal,
 - (b) an address translator controller arranged to provide to an address
25 translator, the IP address of the originating terminal as derived from a call set-up request received by the terminal controller.
7. A call server according to claim 6 including intra-sever communication means arranged to communicate with another call server to obtain an IP
30 address and port for a destination terminal which is under the control of the other call server and wherein the address translator controller is further arranged to provide the IP address and port of the destination terminal to an address translator.
- 35 8. A call server according to claim 6 including intra-sever communication means arranged to communicate with another call server to obtain an IP

address for a first address translator which is in communication with a destination terminal under the control of the other call server and wherein the address translator controller is further arranged to provide the IP address of a second address translator which is in communication with the originating terminal to the said first address translator and vice versa.

9. An address translator comprising:-

- (a) a terminal port for communicating with a terminal,
- (b) a translator port for communicating with another address translator, and
- (c) a control port for communicating with a call server.

10. An address translator according to claim 8, including a controller arranged to receive at the control port, information relating to an IP address of another address translator which is reachable via the translator port and corresponding information relating to an IP address of an originating terminal and to pass data received at the terminal port from the originating terminal to the corresponding address translator via the translator port.

11. A control signal for generating a mapping in an address translator between an originating terminal and another address translator which is in communication with a desired destination terminal.

12. A control signal for generating a mapping in an address translator between a destination terminal and another address translator which is in communication with an originating terminal.

13. A packet-switched network having a call server, a terminal and an address translator, the call server being arranged to control the address translator and to generate a mapping in the address translator between the address of the terminal in the said first network and the address of another network address translator outside the first network, the address translator being arranged to communicate with the other address translator to allow communication with another terminal in another network having an IP address range which overlaps with that of the first network.

14. A method of setting up a call between two packet-switched networks having overlapping address ranges comprising:-
- (a) receiving a call setup request from a terminal in a first of the networks, the call being destined for a terminal in the second network,
 - (b) providing the terminal with the address of an address translator in the first network for use as the terminal's destination address,
 - (c) notifying the address translator of an address to which data received from the terminal, should be passed.
15. Software for a call server which when executed on suitable hardware causes the hardware to carry out the steps of:-
- (a) receiving a call setup request from a terminal in a first of the networks, the call being destined for a terminal in the second network,
 - (b) providing the terminal with the address of an address translator in the first network for use as the terminal's destination address,
 - (c) notifying the address translator of an address to which data received from the terminal, should be passed.
16. A method of translating addresses between terminals in first and second packet-switched networks having overlapping address ranges comprising:-
- (a) receiving notification from a call server of the address of a terminal which will be sending data,
 - (b) receiving notification of an address to which data should be sent when received for the terminal.
 - (c) receiving data from the terminal and forwarding the data to the notified destination address.
17. Software for an address translator which when executed on suitable hardware causes the hardware to carry out the steps of:-
- (a) receiving notification from a call server of the address of a terminal which will be sending data,
 - (b) receiving notification of an address to which data should be sent when received for the terminal.

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- (c) receiving data from the terminal and forwarding the data to the notified destination address.

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